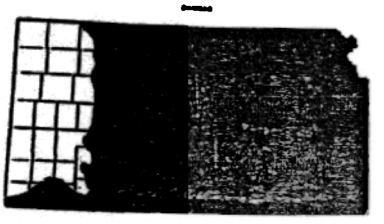
LOAMY TERRACE

KANSAS RANGE SITE DESCRIPTION



1 Location of Site:

Land Resource Area 72
Central High Table Land

2. Climate:

See climate for LRA 72
(Filed in the front of Section II-E)

3. Topography:

This site is on nearly level to gently sloping alluvial benches, terraces, or fans. It receives some additional water in the form of run-in from adjacent uplands. Flooding is rare.

4. Soils and Hydrological Characteristics:

a. These deep soils have loamy or silty surface layers and subsoils. The soils are well drained and have a high available water capacity.

b. The major soils that characterize this site are:

Bridgeport	Humbarger
Dale	Roxbury

c. Erosion of these rangelands by wind and water is a hazard if the vegetation is overgrazed or mismanaged.

5. Climax Vegetation:

a. The natural potential vegetation of this site is a mixed grass prairie. Big bluestem, little bluestem, and sideoats grama are the dominant species in this condition. Combined they will make up about 65 to 70 percent of the total annual yield. This site has a variety of forbs that are mostly found in small amounts.

In its development, the vegetation on this site was influenced by grazing and occasional wildfires. The grazing was predominantly by large transient herds of bison and lesser numbers of other large-hooved animals.

b. Guidelines for Determining Range Condition:

(Percentage of total production by weight)

Grasses and Grasslike - 95 Percent			Forbs - 5 Percent	Shrubs and Cacti
	40	big bluestem	American licorice	None
	5	indiangrass	aromatic aster	
70	15	little bluestem	ashy goldenrod	
	30	sideoats grama	heath aster	
			Missouri goldenrod	
	5	blue grama	5 pitcher sage	
	5	buffalograss	scarlet globemallow	
20	5	vinemesquite	serrateleaf eveningprimrose	
	15	western wheatgrass	skeletonplant	
			slimflower scurfpea	
		Canada wildrye	wavyleaf thistle	
		sand dropseed		
5		sedges		
		switchgrass		

c. Invaders common to this site include prairie threeawn, Japanese brome, kochia, little barley, russianthistle, silver bluestem, tumblegrass, and windmillgrass.

6. Management Implications:

This site generally occurs just above the flood plains on nearly level to gently sloping alluvial benches, terraces, or fans. It occurs on areas commonly referred to as the first and second bottoms where flooding is rare.

Most of this site that occurs as broad, relatively flat areas is being cultivated. The remaining areas in rangeland are usually associated with larger areas of upland range sites. This combination of range sites necessitates the proper location of water, fencing, salt, minerals, feeding areas, and other management techniques to insure proper distribution of grazing.

With continued excessive use by livestock big bluestem, then little bluestem, and sideoats grama will decrease. Long-term overgrazing generally removes these species from the site. Western wheatgrass is the major increaser on this site along with forbs, buffalograss, and blue grama.

When the taller grass species are eliminated, the site becomes dominated by western wheatgrass, buffalograss, and blue grama. In this condition management to return the site to its original productivity is extremely slow. Seeding may be necessary where producers desire to reintroduce the taller species. This condition is quite common especially along the old Sante Fe Trail.

On areas where remnant stands of the taller grasses remain, proper stocking and periodic rest or planned grazing systems are effective in returning the site to near its potential. These are also key elements to maintain or improve the site in any range condition.

7. Wildlife Considerations:

This range site in good to excellent condition, provides excellent habitat for ground nesting birds and other animals. The variety of grasses and forbs found on this site provides the basic ingredients for a large food chain in and around this site.

This site is usually closely associated with wooded streams. It is therefore a common use area for the many species that use the "edge" between grassland and woodland. Many wildlife species prefer the "edge" area for its vegetative diversity.

8. Other Uses and Values:

The alluvial fans, benches, and terraces provide an interesting look at geology and how soil formation and deposition relates to grass production.

This site is often tilled and used as cropland

9. Herbage Production Guidelines:

The following guidelines are based on available clipping data when this site is in excellent condition. Vigor of principal forage species, time of burning, if fire is used, as well as growing conditions, influence annual herbage production.

	Total Air Dry Herbage	
Growing Conditions	Pounds/Acre	Kilograms/Hectare
Favorable	3,000-4,000	3,350-4 500
Normal	2,000-3,000	2,250-3 350
Unfavorable	1,200-2,000	1,350-2 250

10. Guide to Initial Stocking Rates:

Range Condition	Percent Climax Vegetation	Acres/AU Yearlong	AU Months Per Acre	Hectares/AU Yearlong	AUM's per Hectare
Excellent	76-100	16-18	.7	6-7	1.7
Good	51-75	18-22	.6	7-9	1.5
Fair	26-50	22-28	.5	9-11	1.25
Poor	0-25	28+	.35	11+	.85

These guidelines are considered safe initial stocking rates from which a sound management program can be built. Grazing only during the dormant season or use of a specialized grazing program will usually allow a substantial increase in the stocking rates shown.

This site is not normally used for hay production.

11. Relative Preference of Plant Species:

Preferences of plant species by classes of livestock and uses by wildlife will vary from year to year and season to season. The table below is what might be expected under average climatic conditions and good management.

Forage Preferences	Wildlife Preferred Uses
H = High	C = Cover
M = Medium	F = Food
L = Low	N = Nesting

Plant Species	Animal Species			
	Cattle	Sheep	Deer	Pheasant
American licorice	H	H	F	F
big bluestem	H	H	C	C,N
blue grama	H	H	---	---
buffalograss	H	H	---	---
heath aster	M	H	F	C,F
Japanese brome	M 1/	H 1/	F 1/	F 1/
little bluestem	H	H	C	C,N
scarlet globemallow	L	M	F	F
serrateleaf eveningprimrose	L	M	---	---
sideoats grama	H	H	---	C,N
slimflower scurfpea	L	M	F	C,F
switchgrass	H 2/	L	C	C,F,N
vinemesquite	H 2/	M 1/	F	C,F,N
western wheatgrass	H 1/	M 1/	F	C,N

1/ Has a high preference during lush growth periods.

2/ Preferred during first half of growing season.

Reference:

Anderson, Kling L. and Clenton E. Owensby. 1969 Common Names of a Selected List of Plants. Kansas State University Tech. Bul. 117.

LOAMY TERRACE

KANSAS RANGE SITE DESCRIPTION

1. Location of Site:

Land Resource Area 73
Rolling Plains and Breaks

2. Climate:

See climate for LRA 73
(Filed in the front of Section II-E)

3. Topography:

This site is on nearly level to gently sloping alluvial benches, terraces, or fans. They receive some additional water in the form of run-in from nearby uplands. Flooding is rare.

4. Soils and Hydrological Characteristics:

a. These deep soils have loamy or silty surface layers and subsoils. The soils are well drained and have a high available water capacity.

b. The major soils that characterize this site are:

Bridgeport	McCook
Detroit	Roxbury
Hord	

c. Erosion of these soils by wind and water is a hazard if the vegetation is overgrazed or mismanaged.

5. Climax Vegetation:

a. The natural potential vegetation of this site is a mixed grass prairie. Big bluestem dominates the site. Sideoats grama, western wheatgrass, and little bluestem are other major grasses. This site has a variety of forbs that are mostly found in small amounts.

In its development, the vegetation on this site was influenced by grazing and wildfires. The grazing was predominantly by large transient herds of bison and lesser numbers of antelope, elk, and deer.

b. Guidelines for Determining Range Condition:

(Percentage of total production by weight)

Grasses and Grasslike - 95 Percent			Forbs - 5 Percent	Shrubs and Cacti - T	
	50	big bluestem	American licorice		American plum
	5	Canada wildrye	aromatic aster	T	pricklypear
60	5	indiangrass	ashy goldenrod		yucca
	10	little bluestem	catclaw sensitivebriar		
	5	switchgrass	dotted gayfeather		
			daisy fleabane		
		sideoats grama	heath aster		
25		western wheatgrass	Illinois bundleflower		
			5 Louisiana sagewort		
		blue grama	Missouri goldenrod		
		buffalograss	pitcher sage		
0		sedges	scarlet globemallow		
		tall dropseed	scarlet guara		
			serrateleaf eveningprimrose		
		plains muhly	skeletonplant		
T		rosette panicums	slimflower scurfpea		
		sand dropseed	spiderwort		
			western ragweed		

c. Invaders common to this site are Japanese brome, kochia, little barley, prairie threeawn, russianthistle, silver bluestem, tumblegrass, and windmillgrass.

6. Management Implications:

This site generally occurs just above the flood plains on nearly level to gently sloping alluvial benches, terraces, and fans. It occurs on an area commonly referred to as the first and second bottoms where flooding is rare.

Most of this site that occurs on broad flat areas is being cultivated. The remaining areas in rangeland are usually associated with larger areas of upland range sites. This combination of range sites necessitates the proper location of water, salt, minerals, feeding areas, fencing, and other management techniques to insure proper distribution of grazing.

With continued excessive use by livestock big bluestem, then little bluestem, and sideoats grama will decrease. Long-term overgrazing generally removes these species from the site. Western wheatgrass is the major increaser on this site along with forbs, blue grama, and buffalograss.

When the taller grass species are eliminated, the site becomes dominated by western wheatgrass, blue grama, and buffalograss. In this condition management to return the site to its original productivity is slow.

On areas where remnant stands of the taller grasses remain, proper stocking and periodic rest or planned grazing systems are effective in returning the site to near its potential. These are also key elements to maintain or improve the site in any range condition.

7. Wildlife Considerations:

This range site in good to excellent condition, provides excellent habitat for ground nesting birds, rodents, and other small animals. The variety of grasses and forbs found on this site provides the basic ingredients for a large food chain in and around this site.

This site is usually closely associated with wooded streams. It is, therefore, a common use area for the many species that use the "edge" between grassland and woodland. Many wildlife species prefer the "edge" for its vegetative diversity.

8. Other Uses and Values:

Most of this site is used for cropland. The fertile deep soils are excellent for housing and other developments. Rare flooding is a limited problem.

9. Herbage Production Guidelines:

The following guidelines are based on available clipping data when this site is in excellent condition. Vigor of principal forage species, time of burning, if fire is used, as well as growing conditions, influence annual herbage production:

	Total Air Dry Herbage	
Growing Conditions	Pounds/Acre	Kilograms/Hectare
Favorable	4,000-5,000	4,480-5,600
Normal	3,000-4,000	3,360-4,480
Unfavorable	2,000-3,000	2,240-3,360

10. Guide to Initial Stocking Rates:

Range Condition	Percent Climax Vegetation	Acres/AU Yearlong	AU Months Per Acre	Hectares/AU Yearlong	AUM's per Hectare
Excellent	76-100	12-15	.9	5-6	2.2
Good	51-75	15-20	.7	6-8	1.7
Fair	26-50	20-30	.5	8-12	1.2
Poor	0-25	30+	.3	12+	.75

These guidelines are considered safe initial stocking rates from which a sound management program can be built. Grazing only during the dormant season or use of a specialized grazing program will usually allow a substantial increase in the stocking rates shown.

When maintained in good to excellent condition, an average hay yield of about 1 ton per acre can be expected from this site.

11. Relative Preference of Plant Species:

Preferences of plant species by classes of livestock and uses by wildlife will vary from year to year and season to season. The table below is what might be expected under average climatic conditions and good management.

Forage Preferences

H = High
M = Medium
L = Low

Wildlife Preferred Uses

C = Cover
F = Food
N = Nesting

Plant Species	Animal Species			
	Cattle	Sheep	Deer	Pheasant
American licorice	H	H	F	F
big bluestem	H	H	C	C,N
blue grama	H	H	--	--
buffalograss	H	H	--	--
dotted gayfeather	M	M	--	--
heath aster	M	H	F	C,F
Japanese brome	M 1/	H 1/	F 1/	F 1/
little bluestem	H	H	C	C,N
sand dropseed	M	L	--	--
scarlet globemallow	L	M	F	F
sedges	M	M	F	
serrateleaf eveningprimrose	L	M	--	--
sideoats grama	H	H	--	C
slimflower scurfpea	L	M	F	F
switchgrass	H 2/	L	C	C,F,N
tall dropseed	M	L	C	C,N
western ragweed	M	M	F	F
western wheatgrass	H	M	F	C,N

1/ Has a high preference during lush growth periods

2/ Preferred during first half of growing season

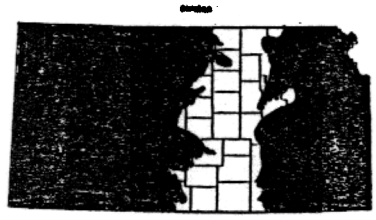
Reference:

Anderson, Kling L. and Clenton E. Owensby. 1969 Common Names of a Selected List of Plants. Kansas State University Tech. Bul. 117.

LOAMY TERRACE

KANSAS RANGE SITE DESCRIPTION

1. Location of Site:



Land Resource Areas 74, 75, and 80A
Central Kansas Sandstone Hills,
Central Loess Plains, and
Central Rolling Red Prairies

2. Climate:

See climate for LRA's 74, 75, and 80A
(Filed in the front of Section II-E)

3. Topography:

This site is on nearly level or gently sloping alluvial benches, terraces, or fans. They receive some additional water in the form of run-in from nearby uplands. Flooding is rare.

4. Soils and Hydrological Characteristics:

a. These deep soils have loamy or silty surface layers and subsoils. Permeability of these soils is moderate or moderately slow. They are well drained or moderately well drained with a high available water capacity. The water table is below the root zone of most range plants.

b. The major soils that characterize this site are:

Brewer	Hobbs
Bridgeport	McCook
Dale	McLain
Detroit	Port
Elandco	Reinach
Eudora	Roxbury

All soils on this site are rarely flooded. For occasionally or frequently flooded soils, see the Loamy Lowland Range Site Description.

c. These soils generally have a low erosion hazard

5. Climax Vegetation:

a. The natural potential vegetation of this site is a mixed grass prairie. Big bluestem dominates the site. Indiangrass, switchgrass, and little bluestem are other major grasses. This site has a variety of forbs that are mostly found in small amounts.

In its development, the vegetation on this site was influenced by grazing and wildfires. The grazing was predominantly by large transient herds of bison and lesser numbers of antelope, elk, and deer.

b. Guidelines for Determining Range Condition:

(Percentage of total production by weight

Grasses and Grasslike - 95 Percent			Forbs - 5 Percent	Shrubs and Cacti - T	
	40	big bluestem	American licorice		American plum
	5	eastern gamagrass	aromatic aster	T	buckbrush
70	15	indiangrass	ashy goldenrod		pricklypear
	15	little bluestem	catclaw sensitivebriar		
	10	switchgrass	compassplant		
			dotted gayfeather		
	5	blue grama	daisy fleabane		
15	5	rosette panicums	heath aster		
	10	sideoats grama	Illinois bundleflower		
	5	western wheatgrass	5 Louisiana sagewort		
			manyflower scurfpea		
	5	buffalograss	Missouri goldenrod		
	5	Canada wildrye	pitcher sage		
10	5	plains muhly	rush skeletonplant		
	5	sedges	scarlet gaura		
	5	tall dropseed	scarlet globemallow		
			serrateleaf eveningprimrose		
T		prairie cordgrass	slimflower scurfpea		
			spiderwort		
			western ragweed		

c. Invaders common to this site are Japanese brome, kochia, little barley, prairie threeawn, russianthistle, silver bluestem, tumblegrass, and windmillgrass.

6. Management Implications:

Most of this site that occurs on broad flat areas is being cultivated The remaining rangeland is usually associated with larger areas of upland range sites. This combination of range sites necessitates the proper location of water, salt, minerals, feeding areas, fencing, and other management techniques to insure proper distribution of grazing.

With continued excessive use by livestock big bluestem, indiangrass, eastern gamagrass, little bluestem, and switchgrass will decrease. Sideoats grama and western wheatgrass are the major increasers on this site along with forbs, blue grama, and buffalograss.

When the taller grass species are eliminated, the site may become dominated by western wheatgrass, blue grama, and buffalograss. In this low range condition returning the site to its original productivity is slow, even with good management techniques.

On areas where remnant stands of the taller grasses remain, proper stocking, periodic rests, or planned grazing systems are necessary to return the site to near its potential. These are also key management tools to maintain or improve the site at any stage of range condition.

7. Wildlife Considerations:

This range site, in good to excellent condition, provides excellent habitat for ground nesting birds, rodents, and other small animals. The variety of grasses and forbs found on this site provides a large food chain in and around this site.

This site is usually closely associated with wooded streams. It is, therefore, a common use area for the many species that use the "edge" between grassland and woodland. Wildlife species prefer this "edge" area for its diversity.

8. Other Uses and Values:

Most of this site is used for cropland. The fertile deep soils attract housing and other developments where even rare flooding can be a problem.

9. Herbage Production Guidelines:

The following guidelines are based on available clipping data when this site is in excellent condition. Vigor of principal forage species, proper burning techniques, if used, as well as growing conditions, influence annual herbage production:

Growing Conditions	Total Air Dry Herbage	
	)unds/Acre	Kilograms/Hectare
Favorable	5,500-7,000	6,160-7,800
Normal	4,000-5,500	4,480-6,160
Unfavorable	3,000-4,000	3,360-4,480

10. Guide to Initial Stocking Rates:

Range Condition	Percent Climax Vegetation	Acres/AU Yearlong	AU Months Per Acre	Hectares/AU Yearlong	AUM's per Hectare
Excellent	76-100	8-11	1.3	3-4	3.2
Good	51-75	11-15	1.0	4-6	2.5
Fair	26-50	15-25	.7	6-9	1.7
Poor	0-25	25+	.4	9+	1.0

These guidelines are considered safe initial stocking rates from which a sound management program can be built. Grazing only during the dormant season or use of a specialized grazing program will usually allow a substantial increase in the stocking rates shown.

When maintained in good to excellent condition, an average hay yield of 1.25 to 1.5 tons per acre can be expected from this site.

11. Relative Preference of Plant Species:

Preferences of plant species by classes of livestock and uses by wildlife will vary from year to year and season to season. The table below is what might be expected under average climatic conditions and good management.

Forage Preferences	Wildlife Preferred Uses
H = High	C = Cover
M = Medium	F = Food
L = Low	N = Nesting

Plant Species	Animal Species			
	Cattle	Sheep	Deer	Pheasant
American licorice	H	H	F	F
big bluestem	H	H	C	C,N
blue grama	H	H	---	---
buffalograss	H	H	---	---
dotted gayfeather	M	M	F	---
eastern gamagrass	H	H	C,F	C,F,N
heath aster	M	H	F	C,F
Japanese brome	M 1/	H 1/	F	F
little bluestem	H	H	C	C,N
scarlet globemallow	L	M	F	F
sedges	M	M	F	---
serrateleaf eveningprimrose	L	M	---	---
sideoats grama	H	H	---	C
scurfpeas	L	M	F	F
switchgrass	H 2/	L	C	C,F,N
tall dropseed	M	L	C	C,N
western ragweed	M	M	F	C,F
western wheatgrass	H	M 1/	F 1/	C,N

1/ Has a high preference during lush growth periods.

2/ Preferred during first half of growing season

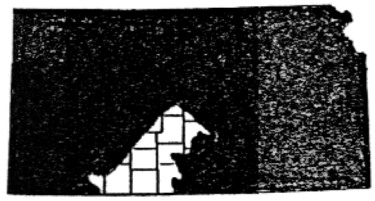
Reference:

Anderson, Kling L. and Clenton E. Owensby. 1969 Common Names of a Selected List of Plants. Kansas State University Tech. Bul. 117.

LOAMY TERRACE

KANSAS RANGE SITE DESCRIPTION

1 Location of Site:



Land Resource Areas 78 and 79
Central Rolling Red Plains and
Great Bend Sand Plains

2. Climate:

See climate for LRA's 78 and 79
(Filed in the front of Section II-E)

3. Topography:

This site is on nearly level or gently sloping alluvial benches, terraces, or fans. They receive some additional water in the form of run-in from nearby uplands. Flooding is rare.

4 Soils and Hydrological Characteristics:

a. These deep soils have loamy or silty surface layers and subsoils The soils are well drained and have a high available water capacity.

b. The major soils that characterize this site are:

Bippus Dale Kaski

All soils on this site are rarely flooded. For occasionally or frequently flooded soils, see the Loamy Lowland Range Site Description.

c. Erosion of these soils by wind and water is a hazard if the vegetation is overgrazed or mismanaged.

5. Climax Vegetation:

a. The natural potential vegetation of this site is a mixed grass prairie. Big bluestem dominates the site. Sideoats grama, western wheatgrass, and little bluestem are other major grasses. This site has a variety of forbs that are mostly found in small amounts.

In its development, the vegetation on this site was influenced by grazing and wildfires. The grazing was predominantly by large transient herds of bison and lesser numbers of antelope, elk, and deer.

b. Guidelines for Determining Range Condition:

(Percentage of total production by weight

Grasses and Grasslike - 95 Percent			Forbs - 5 Percent	Shrubs and Cacti - T
	50	big bluestem	American licorice	American plum
	5	Canada wildrye	aromatic aster	T pricklypear
60	5	indiangrass	ashy goldenrod	small soapweed
	10	little bluestem	catclaw sensitivebriar	
	5	switchgrass	compassplant	
			dotted gayfeather	
	15	sideoats grama	daisy fleabane	
25	15	western wheatgrass	heath aster	
			Illinois bundleflower	
		blue grama	5 Louisiana sagewort	
		buffalograss	Missouri goldenrod	
10		sedges	pitcher sage	
		tall dropseed	rush skeletonplant	
			scarlet globemallow	
		plains muhly	scarlet gaura	
T		rosette panicums	serrateleaf eveningprimrose	
		sand dropseed	slimflower scurfpea	
			spiderwort	
			western ragweed	

Invaders common to this site are Japanese brome, kochia, little barley, prairie threeawn, russianthistle, silver bluestem, tumblegrass, and windmillgrass.

6. Management Implications:

Most of this site that occurs on broad flat areas is being cultivated. The remaining areas in rangeland are usually associated with larger areas of upland range sites. This combination of range sites necessitates the proper location of water, salt, minerals, feeding areas, fencing, and other management techniques to insure proper distribution of grazing.

With continued excessive use by livestock big bluestem, little bluestem, and sideoats grama will decrease. Long-term overgrazing generally removes these species from the site. Western wheatgrass is the major increaser on this site along with forbs, blue grama, and buffalograss.

When the taller grass species are eliminated, the site becomes dominated by western wheatgrass, blue grama, and buffalograss. In this condition, management to return the site to its original productivity is slow.

On areas where remnant stands of the taller grasses remain, proper stocking and periodic rest or planned grazing systems are effective in returning the site to near its potential. These are also key elements to maintain or improve the site in any range condition.

7. Wildlife Considerations:

This range site in good to excellent condition, provides excellent habitat for ground nesting birds, rodents, and other small animals. The variety of grasses and forbs found on this site provides a large food chain in and around this site.

This site is usually closely associated with wooded streams. It is, therefore, a common use area for the many species that use the "edge" between grassland and woodland. Many wildlife species prefer the "edge" for its vegetative diversity.

8. Other Uses and Values:

Most of this site is used for cropland. Flooding is not normally a problem but can occur.

9. Herbage Production Guidelines:

The following guidelines are based on available clipping data when this site is in excellent condition. Vigor of principal forage species, time of burning, if fire is used, as well as growing conditions, influence annual herbage production:

	Total Air Dry Herbage	
Growing Conditions	Pounds/Acre	Kilograms/Hectare
Favorable	4,500-6,000	5,040-6,720
Normal	3,500-4,500	3,920-5,040
Unfavorable	2,500-3,500	2,800-3,920

10. Guide to Initial Stocking Rates:

Range Condition	Percent Climax Vegetation	Acres/AU Yearlong	AU Months Per Acre	Hectares/AU Yearlong	AUM's per Hectare
Excellent	76-100	10-12	1.1	4-5	2.7
Good	51-75	12-17	.8	5-7	2.0
Fair	26-50	17-25	.6	7-10	1.5
Poor	0-25	25+	.4	10+	1.0

These guidelines are considered safe initial stocking rates from which a sound management program can be built. Grazing only during the dormant season or use of a specialized grazing program will usually allow a substantial increase in the stocking rates shown.

When maintained in good to excellent condition, an average hay yield of about 1.0 ton per acre can be expected from this site.

11. Relative Preference of Plant Species:

Preferences of plant species by classes of livestock and uses by wildlife will vary from year to year and season to season. The table below is what might be expected under average climatic conditions and good management.

Forage Preferences

H = High
M = Medium
L = Low

Wildlife Preferred Uses

C = Cover
F = Food
N = Nesting

Plant Species	Animal Species			
	Cattle	Sheep	Deer	Pheasant
American licorice	H	H	F	F
big bluestem	H	H	C	C,N
blue grama	H	H	---	---
buffalograss	H	H	---	---
dotted gayfeather	M	M	---	---
heath aster	M	H	F	C,F
Japanese brome	M 1/	H 1/	F	F
little bluestem	H	H	C	C,N
sand dropseed	M	L	---	C
scarlet globemallow	L	M	F	F
sedges	M	M	F	---
serrateleaf eveningprimrose	L	M	---	---
sideoats grama	H	H	---	C
slimflower scurfpea	L	M	F	F
switchgrass	H 2/	L	C	C,F,N
tall dropseed	M	L	C	C,N
western ragweed	M	M	F	C,F
western wheatgrass	H	M	F	C,N

1/ Has a high preference during lush growth periods

2/ Preferred during first half of growing season

Reference:

Anderson, Kling L. and Clenton E. Owensby. 1969 Common Names of a Selected List of Plants. Kansas State University Tech. Bul. 117.